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TROUTMAN, SANDERS, MAY & VALENTINE
attn: JOHN CURTIN, ESQ.
1660 INTERNATIONAL DRIVE
SUITE 600
MCLEAN, VA 22102

EXAMINER
VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
2697	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/523,615	CAO, YANG	
	Examiner	Art Unit	
	Thomas Volper	2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 March 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because Figures 1-8 have hand drawn labels. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1-28 are objected to because of the following informalities: The claims use the terms "NE" and "network element" interchangeably. Applicant must use consistent terminology throughout the claims. Appropriate correction is required.

3. Claims 19 and 20 are objected to because of the following informalities: "The system of claim 1" in line 1 of both claims should be changed to --The system of claim 15--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-28 contain vague language and numerous antecedent basis problems. The language that renders the claims indefinite includes, but is not limited to, the following examples:

Claim 1 recites the limitation "the network element" in line 4. It is not clear whether this refers to "A network element (NE)" in line 1 or if it refers to "another network element" in line 2.

Claims 2-14 recite the limitation "The NE". It is not clear whether "The NE" refers to "A network element (NE)" in line 1 of claim 1, or if it refers to "another network element" in line 2 of claim 1.

Claim 12 recites the limitation "the ports" in line 3. It is not clear whether this limitation refers to "a plurality of SONET/SDH ports", lines 1-2, or "a plurality of ports", lines 2-3.

Claims 13 and 14 recite the limitation "the port binding information". There is insufficient antecedent basis for this limitation in the claims.

Claim 15 recites the limitation "the network element" in line 7. It is not clear whether this network element is one of the "plurality of circuit switching elements" or "plurality of packet switching network elements".

Claim 23 recites the limitation "the groups" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitations "the connected NE" in line 10 and "the connected network element" in line 12. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2, 6-16 and 19-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madonna (US 5,544,163) in view of Tounai et al. (US 5,870,382).

Regarding claims 1, 15 and 23, Madonna discloses an inter-nodal network (12) (see Figure 1A) wherein a port of any given node may be connected to any port of the same node or any other node (col. 6, lines 61-63). The nodes may switch both circuit switched data and packet switched data between each other (col. 15, lines 7-16). In one embodiment, multiple inter-nodal networks are connected together (col. 22, lines 29-41; see Figure 9A). Madonna also discloses that one of the nodes in the inter-nodal network, node (6g), is designated as "master node A". Any of the nodes may be configured as the master node, but there may only be one active master node at any given time (col. 6, lines 32-41). The master node initializes and configures the system, which includes either assigning a nodal address to each node or polling each node to determine their previously assigned address. The master node also may assign each nodal switch a particular ring for transmitting and receiving packets. Many rings are used to implement any inter-nodal network (col. 13, lines 33-47; also see Figure 7). Madonna fails to expressly disclose that a network element, or node, includes a transport overhead message, a request for port identification and a port detection signal, which are sent in an out-of-band-channel. Tounai disclose a transport overhead message comprised of a K1 byte and K2 byte that is used to

perform switching control (col. 4, lines 33-42). The K1 byte and K2 byte are sent on a protection line, which represents the out-of-band channel of the present invention (see Figure 1). The K1 and K2 bytes contain information about which channel number to use, which corresponds to certain ports on the equipment (#1) and (#2). The network equipment (#1) and (#2) are both capable of transmitting K1 and K2 bytes, representing the request for port identification, and receiving K1 and K2 bytes. If either equipment receives a K1 and K2 byte, the equipment sends out a K1 and K2 byte in response, representing the port detection signal, which contains the same channel number as requested (col. 12, lines 7-39). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use this transport overhead message of Tounai in the invention of Madonna in order to specify which ports are to be used in communication between two nodes. One of ordinary skill in the art would have been motivated to do this to communicate port settings without impeding traffic on the working channels.

Regarding claims 2, 6 and 16, Madonna discloses that one of the nodes is a master node, which is representative of the leader network element of the present invention (col. 6, lines 32-41). Madonna also discloses that a port of any given node may be connected to any port of the same node or any other node (col. 6, lines 61-63)

Regarding claims 7, 9 and 10, Madonna discloses transferring information in packet form and direct access to all ports, which is highly compatible with ATM operation on SONET networks (col. 3, lines 41-52).

Regarding claim 8, Madonna fails to disclose that the network element is a SDH network element. SDH is a standard well known in the art and is analogous to SONET. At the time the

invention was made, it would have been obvious to a person of ordinary skill in the art to use an SDH network element. One of ordinary skill in the art would have been motivated to do this to support a wider variety of standards.

Regarding claims 11, 19 and 24, Madonna fails to expressly disclose that the port detection signal is a SONET/SDH protection switching message. Tounai discloses using K1 and K2 bytes for performing switching control (col. 4, lines 33-42). These K1 and K2 bytes represent the SONET/SDH protection switching message of the present invention. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the K1 and K2 bytes of Tounai as a port detection signal in the invention of Madonna. One of ordinary skill in the art would have been motivated to do this to provide port connection information between nodes without impeding traffic on the working channels.

Regarding claims 12, 20, 25 and 26, Madonna discloses a plurality of ports (col. 10, lines 15-34). Madonna fails to expressly disclose polling a plurality of ports to detect which of the ports receives the port detection signal. Tounai discloses that the K1 and K2 byte, representing the port detection signal of the present invention, specify which channel to use when they are received (col. 12, lines 7-39). The channel number corresponds to certain ports on the equipment (#1) and (#2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide the port that received the port detection signal to a requesting node in the invention of Madonna. One of ordinary skill in the art would have been motivated to do this so that the node would know which working channel to transmit information on.

Regarding claims 13, 14, 21, 22, 27 and 28, Madonna discloses that the master node, or leader network element, is responsible for configuring the system. This includes assigning each

nodal switch a particular ring for transmitting and receiving packets (col. 13, lines 33-47). This meets the limitation of storing port binding information.

8. Claims 3-5, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madonna (US 5,544,163) in view of Tounai et al. (US 5,870,382) as applied to claims 1, 2, 6-16 and 19-28 above, and further in view of Au (US 6,473,397).

Regarding claims 3, 4, 17 and 18, the system provided by Madonna in view of Tounai et al. fails to expressly disclose a port identification request queue. Au discloses a system of interconnected nodes that communicate with each other by using a number of ports (Figure 5). Au also discloses that each of the ports comprises a queue (col. 8, line 60 – col. 9, line 4). Every cell received at a port enters the queue for that port. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use ports comprising a queue to receive the port identification requests in the system provided by Madonna in view of Tounai et al. One of ordinary skill in the art would have been motivated to do this to avoid dropping requests if multiple requests were received at a particular port.

Regarding claim 5, Madonna discloses that a port of any given node may be connected to any port of the same node (col. 6, lines 61-63). Thus a port on a particular node would be able to receive a request at a different port on that same node.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stamatelakis et al. (US 6,404,734) Scalable Network Restoration Device

Higgins et al. (US 5,923,643) Redundancy, Expanded Switching Capacity and Fault Isolation Arrangements for Expandable Telecommunications Systems

10. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

tev

August 7, 2003

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600